635.
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Ips-D. brevicomis Outbreaks in Northern California Areas. Season of 1938.

One element of the 1938 forest insect infestation in the Northern California Areas consisted of an entirely unexpected killing of groups of poles and immature trees by engraver beetles and the western pine beetle. This infestation seemed different from the main or normal infestation as to type, cause and background.

Location of Outbreaks

This type of infestation has been seen in the following localities:

Clipper Gap, Placer County
South of Clipper Gap, Eldorado County
Magalia, Butte County
Stirling City, near Butte Meadows, Deer Creek canyon and along the Ponderosa Way from Jiggs Camp to near Manton in Tehama County.
Round Mountain, Montgomery Creek and near Cayton in Shasta County
McCloud River Valley in Siskyou County
Near Whitehorse and Happy Camp in Modoc County
Cobb Mountain Resort Area, Lake County
Los Posados State Forest, Napa County

In addition, reports have been received of similar infestations in the following areas:

Near Coppervale, Lassen County. (U.S.F.S. - Conversation V. Parker)
On Tahoe National Forest. (U.S.F.S. - Correspondence B. F. Goldsmith)
On Mendocino National Forest. (U.S.F.S. - Conversation W. Derby)

Nature of the Attack

Figures 1 to 3 show typical groups or infestations, the types of trees attacked and other features of the infestation at Los Posados, Cobb Mountain and Montgomery Creek.

In many of the groups Ips apparently attacked first, and in addition to the completely infested Ips-D.b. trees, a few topkilled trees were present on the fringes of each group. In other cases it was not certain which species attacked first, or it seemed evident that the western pine beetle initiated the attack. In many groups the trees were but 50 to 100 years of age.

Possible Background

The history of Ips outbreaks in California is one of sudden increases in Ips populations and sporadic occurrence of infestations in

which that species predominates. Sudden attacks by the increased population on groups of young, thrifty and relatively resistant trees usually have occurred in late summer or fall and sudden subsidence of the infestations has followed soon after. Drought, windfalls, slash or other weakened or dead material usually has been considered the cause. Western pine beetle outbreaks usually are less sudden in their development, but are nearly as rapid in their subsidence. Both species seem well adapted and are prone to take advantage of and produce broods in injured material as well as in the uninfested portions of topkilled trees (Db) and in the tops of bole infested trees (Ips).

In the winter and spring of 1937-38 season windfalls were put down over a large part of the northern California forest area. Though there was an abundance of such material in some localities (Clipper Gap in particular) it was a widespread and scattered and not a concentrated type of damage. In east side forests the fall cruise showed a limited number of widely scattered windfalls. In addition, and in many areas, the snows of that winter caused an unusually large amount of snowbreak. (Los Posados, Cobb Mountain, Butte Mdws., Stirling City and Tahoe N. F.).

In other years and in other places similar snowbreaks have not always been followed, so far as our records indicate, by similar outbreaks. Thus other factors must have been favorable for the successful development of Ips and D.b. broods in the injured material. Examinations of windfalls on the Modoc (West) and of windfalls and snowbreaks in other localities mentioned above (Salman) showed that heavy Ips broods did develop and emerge particularly from the smaller sized material and that D.b. did attack and develop in some of the larger injured stems. The presence of the infestation in injured material over a wide area during the spring and summer of 1938 seems a logical explanation, in the light of past experience, for the outbreak tendencies in late summer. If the situation described above was responsible for the outbreak and if subsequent extremely adverse climatic conditions have not materially changed the conditions affecting the situation, it can be expected that this element of the 1938 infestation will not be an important factor contributing to the 1939 losses.

Respectfully submitted,

K. A. Salman
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Berkeley, California
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Figure 1.

Group Kill of thrifty trees by Ips-D.b. at Los Posados State Park. (11074a)

Figure 2.

Snowbreak and ~~sticks~~ stubs infested by summer broods of Ips confusus Lec. (11071)

Figure 3.

Group topkills and scattered 1938 infestation near Montgomery Creek.